

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A fluid spray head comprising an expulsion channel provided with a spray orifice (1) and a spray profile (10) formed in an end wall of said expulsion channel, said spray profile (10) comprising non-radial spray channels (11) opening out to a central spray chamber (12) disposed directly upstream from said spray orifice (1), the spray head being characterized in that the central axis (X) of said spray orifice (1) is offset from the central axis (Y) of the spray chamber (12) by a distance that is less than 0.12 mm, and preferably less than 0.08 mm.

2. (original): A spray head according to claim 1, in which said spray chamber (12) has a diameter of 1 mm.

3. (previously presented): A spray head according to claim 1, in which said spray orifice (1) has a diameter of 0.3 mm.

4. (previously presented): A set of spray heads manufactured from a common mold cavity, the set being characterized in that said heads are made according to claim 1.

5. (original): A set according to claim 4, in which the standard deviation of the offset of the central axis (X) of the spray orifice (1) relative to the central axis (Y) of the spray chamber

(12) for all of the spray heads coming from a common mold cavity is less than 0.03 mm, and advantageously less than 0.01 mm.

6. (previously presented): A fluid dispenser device characterized in that it includes a spray head according to claim 1.

7. (withdrawn): A machine for manufacturing a spray head according to claim 1, the machine including at least one mold provided with at least one mold cavity of said head, said machine being characterized in that it includes a core pin (100) for each mold cavity, the front face of said pin (100) incorporating a profile (110) that is complementary to the spray profile (10) of the head, said complementary profile (110) being made up of projections forming non-radial channels (11) and the spray chamber (12), said pin (100) further incorporating a punch (120) so as to form the dispenser orifice (1).

8. (withdrawn): A machine according to claim 7, in which said punch (120) is removable from said pin (100), making it possible to replace said punch (120) without having to change the pin (100).

9. (withdrawn): A machine according to claim 8, in which said punch (120) is secured to a needle (130) that extends longitudinally inside the pin (100) over a substantial fraction of its length.

10. (previously presented): A set of spray heads, each according to claim 1 and manufactured from a common mold cavity.

11. (previously presented): The set according to claim 10, wherein for each spray head, the standard deviation of the offset of the central axis (X) of the spray orifice (1) relative to the central axis (Y) of the spray chamber (12) is less than 0.03 mm.

12. (previously presented): The set according to claim 10, wherein for each spray head, the standard deviation of the offset of the central axis (X) of the spray orifice (1) relative to the central axis (Y) of the spray chamber (12) is less than 0.01 mm.

13. (new): A method for manufacturing a spray head comprising:
forming a hollow cavity comprising an inner shape that is complementary to an outer shape of the spray head;

forming a cavity insert from a pin by:

providing a projection on an end of the pin that has a shape complementary to a shape of a spray chamber of the spray head;

providing a projection on the end of the pin that has a shape complementary to a shape of at least one non-radial spray channel;

providing a projection on the end of the pin that has a shape complementary to a spray orifice of the spray head;

placing the pin in the hollow cavity;

forming the spray head by injecting material into a space formed between the hollow cavity and the pin.

14. (new): A method according to claim 13, further comprising:
securing the projection that corresponds with the spray orifice to the pin by a removable needle.

15. (new): A method according to claim 13, further comprising:
forming a plurality of spray heads from the hollow cavity and the pin;
wherein the standard deviation of an offset of a central axis of the spray orifice relative to a central axis of the spray chamber for all of the spray heads is less than 0.03 mm.

16. (new): A method according to claim 13, further comprising:
forming a plurality of spray heads from the hollow cavity and the pin;
wherein the standard deviation of an offset of a central axis of the spray orifice relative to a central axis of the spray chamber for all of the spray heads is less than 0.01 mm.